

**UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION
Metal and Nonmetal Mine Safety and Health**

REPORT OF INVESTIGATION

**Underground Nonmetal Mine
Limestone (crushed and broken)**

**Fatal Fall of Ground (Rib/Back) Accident
January 25, 2017**

**Linwood Mine
Linwood Mining and Minerals Corporation
Davenport, Scott County, Iowa
Mine ID No. 13-00097**

Investigators

**Thomas H. Heft
Mine Safety and Health Inspector**

**William S. Poynter
Mine Safety and Health Inspector**

**James M. Peck
Staff Assistant**

Originating Office

**Mine Safety and Health Administration
North Central District
515 W. First Street Room 323
Duluth, MN 55802
Christopher A. Hensler, District Manager**



OVERVIEW

Ronald G. Trich, Jr., Haul Truck Driver, age 52, was fatally injured on January 25, 2017, when he crossed over a berm that barricaded off the North 40 west 35 area to search for crystals and a portion of the rib collapsed, burying him

The accident occurred because safety protocols and training in place at the mine were not being followed. The area where the accident occurred was barricaded to indicate dangerous conditions existed in the area and access was not permitted.

GENERAL INFORMATION

The Linwood Mine is an underground limestone mine operated by the Linwood Mining and Minerals Corporation located in Scott County, Davenport, Iowa. The principal operating official is Jonathan Wilmshurst, President. The limestone is drilled, blasted and hauled to the crusher, located on the surface; the material is then sized and stockpiled. The finished product is sold for use in the construction trade, and it is used by the company in its lime production facility.

Total employment at the mine is 61 miners, including 24 employees who work underground. The underground portion of the mine operates Monday through Friday. Production starts at 3:30 a.m. and continues until 4:30 p.m. Depending on job duties, miners start and end their shifts at different times.

DESCRIPTION OF ACCIDENT

On Wednesday, January 25, 2017, Ronald Trich, Jr., Haul Truck Driver, started work at 4:00 a.m., his normal starting time. Eric Miller, Mine Superintendent, assigned Trich his typical duties of hauling limestone from various locations in the mine to the crusher.

Trich's first assignment was to haul limestone from the North 11 area. Justin Voss, Front End Loader Operator in the North 11 area, loaded the haul truck operated by Trich. When finished there, Trich was scheduled to go to the area designated as North 35 West 53 on the Otis Level, to be loaded with limestone by Miles Ricketts, Front-end Loader Operator.

At 11:45 a.m., Ricketts loaded Trich's truck with limestone.

At 12:00 p.m., Trich met Chuck Petersen, Oiler, in the shop, and asked him for some rags. About five minutes later, Ryan Johns, another Haul Truck Driver, observed Trich in his haul truck driving towards the old ramp area. This was the last time an employee observed Trich during his shift. His work shift was supposed to end at 3:30 p.m.

At 6:40 p.m., Jennifer Trich, the victim's wife, telephoned Dyrk Huffman, Vice President of Aggregates and asked if her husband had been at work that day. She told Huffman her husband had called her around 1:30 p.m. and stated he would be heading home soon. Huffman told her he did not know and would get back to her. Huffman called Miller and found out Trich had been at work earlier.

Shortly thereafter, Huffman called Vern Burton, Night Shift Supervisor/Maintenance Coordinator, and asked him to determine if Trich was still tagged in at the mine. Burton reported Trich was still tagged in, and his personal vehicle was still at the mine. Burton also said he did not see Trich's haul truck. Huffman called Miller back and told him to go to the mine to meet

Burton and locate Trich. Huffman also called Mark Klimek, Engineer/Safety Coordinator, and explained the situation.

At 7:00 p.m., Miller arrived at the mine with his son Austin Miller. Miller had called Joe Haynes, Utility Man, and he had also arrived. The men started a search for Trich.

About an hour later, Miller and his son located Trich's haul truck in the North 40 West 35 area parked by a berm, used to prevent access to the North 40 area. After hearing that Trich's haul truck had been found, Huffman traveled to the surface to notify the Mine Safety and Health Administration (MSHA) while the remaining men searched the area and discovered a fresh pair of ear plugs on the opposite side of the berm from the truck. While looking for Trich, they observed freshly fallen material on a spoil pile in North 40 inside the bermed off area across from the truck. Trich was known for collecting crystals in the mine, and they suspected Trich had gone into the barricaded area looking for crystals. An excavator was used to remove the berm and move material in the spoil pile. At 9:45 p.m., members of the search team found Trich's boot in the spoil pile and digging ceased. The Buffalo Fire/Police Department and the Scott County Sherriff's office were notified.

After scaling loose material, recovery operations resumed with the excavator, and the victim was recovered January 26, 2017 at 3:00 a.m.

On January 26, 2017, at 3:30 a.m., the Scott County Medical Examiner pronounced Trich dead, the cause of death was mechanical asphyxiation.

INVESTIGATION OF ACCIDENT

Dyrk Huffman called the Department of Labor's National Contact Center (DOLNCC) to notify MSHA of the accident at 8:16 p.m. on January 25, 2017. The DOLNCC notified William Soderlind, Field Office Supervisor, and MSHA started an investigation the same day. Mine Safety and Health Inspector William Poynter arrived at the site at 9:45 p.m., and he issued a 103(k) order to the mine operator.

MSHA's accident investigation team arrived at the mine site the following day. Investigators conducted a physical examination of the accident scene, a review of documents including training records, interviews with employees, and a review of company procedures. MSHA conducted the investigation with the assistance of mine management and mine employees.

DISCUSSION

Location of the Accident

The accident occurred in the North 40 West 35 area of the Otis level. A rib failure near the south rib in North 40 buried the victim, who was on a spoil pile in North 40 on top of approximately 20 feet of spoiled material.

Crystals

Crystals are present in the limestone deposit throughout the mine, and they are normally associated with voids and loose rock. Investigators believed Trich was searching for crystals when the rib failure occurred. They found a small hatchet and pry bar in the spoil pile during recovery. Additionally, investigators found crystals in Trich's haul truck and on his person. Management verbally warned Trich twice for going into barricaded areas to look for crystals. Miners who were interviewed stated they previously warned Trich about going into dangerous areas to look for crystals.

Bermed Off Areas

Management's policy was to install berms around areas they deemed dangerous to prevent access. Miners were trained not to cross over berms and not to enter bermed off areas.

Training and Experience

Ronald G. Trich, Jr. (victim) had a total of 25 years and 25 weeks of mining experience. He had 11 years, 42 weeks and 3 days experience at this mine, all as a haul truck driver.

MSHA's review of training records, training materials and investigative interviews indicated miners had been trained on berms and barricades, including their purpose. Training topics included instructions not to cross the barricade and the type of hazards that can exist beyond berms and barricades.

ROOT CAUSE ANALYSIS

MSHA conducted a root cause analysis and the following causes were identified:

Root Cause: Management's policies, procedures and controls did not prevent employees from entering barricaded and dangerous areas.

Corrective action: Management conducted retraining with miners on barricaded and dangerous areas in the mine and the use of barricades. Management installed additional berms and signage in these prohibited areas.

CONCLUSION

The accident occurred because safety protocols and training in place at the mine were not being followed. A miner entered an area of the mine where dangerous conditions existed and access was not permitted and was killed when a rib collapsed and buried him.

ENFORCEMENT ACTIONS

Order No. 8895919- Issued on January 25, 2017, under the provisions of Section 103K of the Mine Act:

A fatal accident occurred at this operation on January 25, 2017, when a miner was trapped by material in the N40 & W35 intersection underground. This order is issued to assure the safety of all persons at this operation. It prohibits all activity within 150 feet surrounding the N39 & W35 intersection including all mobile equipment until MSHA has determined that it is safe to resume normal mining operations in the area. The mine operator shall obtain prior approval from an authorized representative for all actions to recover and/or restore operations to the affected area.

The order was terminated on February 7, 2017, when the company put additional measures in place to prohibit persons from entering the area, and provided retraining to miners about going into barricaded and prohibited areas. Management expanded the boundaries of the prohibited area by installing additional berms and signage.

Approved by:

Christopher A. Hensler, District Manager

Date

Appendix A

Persons participating in the investigation

Linwood Mining and Minerals Corporation

Jonathan WilmshurstPresident
Dyrk Huffman.....Vice president of Aggregates
Mark Klimek.....Engineer/Safety Coordinator
Vern Burton.....Night shift supervisor/Maintenance Coordinator
Dan Holst.....Maintenance Supervisor
Eric Miller.....Mine Superintendent
Justin Voss.....Front End Loader Operator
Miles Ricketts.....Front-end Loader Operator
Chuck Petersen.....Oiler
Ryan Johns.....Haul Truck Driver
Joe Haynes.....Utility Man

Mine Safety and Health Administration

Thomas H. Heft.....Mine Safety and Health Inspector
William S. Poynter.....Mine Safety and Health Inspector
James M. Peck.....Staff Assistant

APPENDIX B - Victim's information

Accident Investigation Data - Victim Information

U.S. Department of Labor
Mine Safety and Health Administration

Event Number:

Victim Information: 1

1. Name of Injured/Ill Employee: Ronald G. Trich, Jr.				2. Sex: M		3. Victim's Age: 5 2 			4. Degree of Injury: 0 1 																				
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:						6. Date and Time Started:																							
a. Date: 01/26/2017						b. Time: 03:30am			a. Date: 01/25/2017			b. Time: 4:00am																	
7. Regular Job Title: 0 7 6 Haul truck driver						8. Work Activity when Injured: 0 9 8 non work related activity						9. Was this work activity part of regular job?																	
						Yes			No			<input checked="" type="checkbox"/>																	
10. Experience: Years			Weeks			Days			Years			Weeks			Days														
a. This Work Activity:			b. Regular Job Title:			c. This Mine:			d. Total Mining:																				
						11 42 3			11 42 3			25 25																	
11. What Directly Inflicted Injury or Illness? 1 2 2 fall of rib						12. Nature of Injury or Illness: 1 1 0 																							
13. Training Deficiencies:												Hazard:			New/Newly-Employed Experienced Miner:			Annual:			Task:								
14. Company of Employment: (if different from production operator)												Independent Contractor ID: (if applicable)																	
15. On-site Emergency Medical Treatment:												Not Applicable: <input checked="" type="checkbox"/>			First-Aid:			CPR:			EMT:			Medical Professional:			None: <input checked="" type="checkbox"/>		
16. Part 50 Document Control Number: (form 7000-1) 2 2 0 1 7 0 3 7 0006												17. Union Affiliation of Victim: Local 150 Operating Engineers																	

Victim Information: 2

1. Name of Injured/Ill Employee:				2. Sex:		3. Victim's Age:			4. Degree of Injury:																				
5. Date(MM/DD/YY) and Time(24 Hr.) Of Death:						6. Date and Time Started:																							
a. Date:						b. Time:			a. Date:			b. Time:																	
7. Regular Job Title:						8. Work Activity when Injured:						9. Was this work activity part of regular job?																	
						Yes			No																				
10. Experience: Years			Weeks			Days			Years			Weeks			Days														
a. This Work Activity:			b. Regular Job Title:			c. This Mine:			d. Total Mining:																				
11. What Directly Inflicted Injury or Illness?						12. Nature of Injury or Illness:																							
13. Training Deficiencies:												Hazard:			New/Newly-Employed Experienced Miner:			Annual:			Task:								
14. Company of Employment: (if different from production operator)												Independent Contractor ID: (if applicable)																	
15. On-site Emergency Medical Treatment:												Not Applicable: <input type="checkbox"/>			First-Aid:			CPR:			EMT:			Medical Professional:			None: <input type="checkbox"/>		